



# National Research & Educational Network of Ecuador

**CEDIA**

**C**onsorcio **E**cuatoriano para el  
**D**esarrollo de **I**nternet **A**vanzado

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# Location



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"A Consortium of Universities created to promote and coordinate the development of advance research networks focus in academic, scientific and technology development of Ecuador".

# Research & Educational Network of Ecuador, CEDIA – Milestones

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- **May 2001** – ESPOL team started exploring the possibilities to connect to the international academic networks
- March 15, 2002 – first national meeting to discuss about the next generation of Internet and Internet2, in Guayaquil, 38 Organizations participated in this meeting.
- March 26, 2002 – second meeting, with Internet2 - US, CUDI - Mexico and RNP – Brazil, @LIS
- **September 18, 2002** – CEDIA was officially created: 7 Universities, 2 Research Institutions and 2 Government Agencies.
- October 2002 – Ecuador signed the MoU with UCAID – Internet 2, at the Internet2 member meeting in Los Angeles.

# Research & Educational Network of Ecuador, CEDIA – Milestones

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- January 10, 2003 – CEDIA's Statute was registered at the Education and Culture Ministry of Ecuador.
- **June 2003** – Ecuador joins the CLARA – Phase A, Project
- December 2003 – WSIS preparatory meeting organized by OAS in Quito, included a session on Advance R&E Networks helped us raise awareness about connectivity to advance academic networks
- **February 2004** – first technical workshop with NSRC – UO support
- **February 2004** – started negotiations with Fondo de Solidaridad to get access to the national fiber optic infrastructure.

# Research & Educational Network of Ecuador, CEDIA – Milestones

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- **March 2004** – CEDIA signed the participation in CLARA – Phase B, Project.
- **September 2004** – First tender call for providing connectivity to CEDIA members
- **October 2004** – selection of the ISP for connectivity of CEDIA members and its national backbone.
- **November 2004** – international tender for providing CEDIA's connectivity to CLARA network
- **December 2004** – CEDIA's national virtual network started as a network based on a provider
- **December of 2004** – CEDIA signed an Inter Institutional Agreement with Fondo de Solidaridad

# Research & Educational Network of Ecuador, CEDIA – Milestones

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- January 2005 – selection of the international carrier for connecting CEDIA to CLARA
- **March 2005** – international connection started operation from CEDIA to CLARA
- **July 2005** – All CEDIA Members got connected to the provider's fiber optic network
- December 2005 – Ecuador started to look for another fiber optic international connection.
- May 2006 – CONATEL started to negotiate the landing site in the coast of Ecuador
- **December 2006** – Ecuador signed the contract for the new fiber optic with a consortium of companies, including CEDIA's current provider

# Research & Educational Network of Ecuador, CEDIA – Milestones

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- March 2007 deployment of new fiber cable started
- **November 2007** fiber cable was operational
- January 2008 a third connectivity tender for CEDIA was called
- March 2008 – the second 4 years strategic plan was jointly established



# CEDIA Members (May 2008)

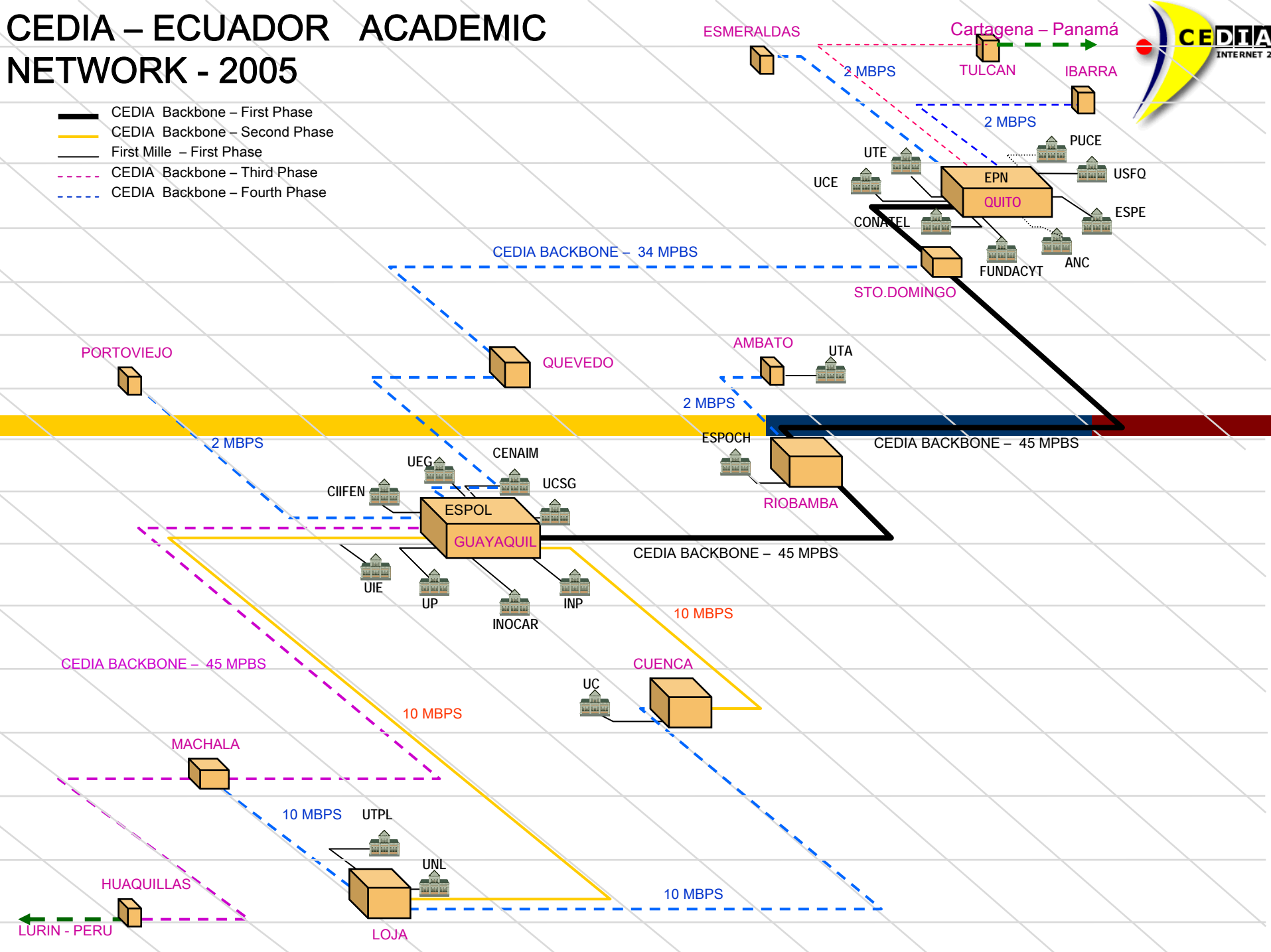
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1. Secretaria Nacional de Ciencia y la Tecnología – SENACYT
2. Consejo Nacional de Telecomunicaciones – CONATEL
3. Escuela Superior Politécnica del Chimborazo – ESPOCH
4. Escuela Superior Politécnica del Ejército – ESPE
5. Escuela Superior Politécnica del Litoral – ESPOL
6. Escuela Superior Politécnica Nacional – EPN
7. Instituto Nacional de Pesca – INP
8. Instituto Oceanográfico de la Armada del Ecuador – INOCAR
9. Universidad Católica de Santiago de Guayaquil – UCSG
10. Universidad Nacional de Loja – UNL
11. Universidad Técnica Particular de Loja - UTPL
12. Universidad de Cuenca – UC
13. Universidad Católica de Santo Domingo – PUCSD
14. Universidad Central del Ecuador – UCE
15. Universidad Técnica Equinoccial – UTE
16. Universidad Internacional del Ecuador – UIE
17. Universidad de San Francisco de Quito – USFQ
18. Universidad Técnica de Ambato – UTA
19. Universidad Técnica de Milagro – UTM
20. Universidad Católica de Ibarra – PUCI

# CEDIA – ECUADOR ACADEMIC NETWORK - 2005



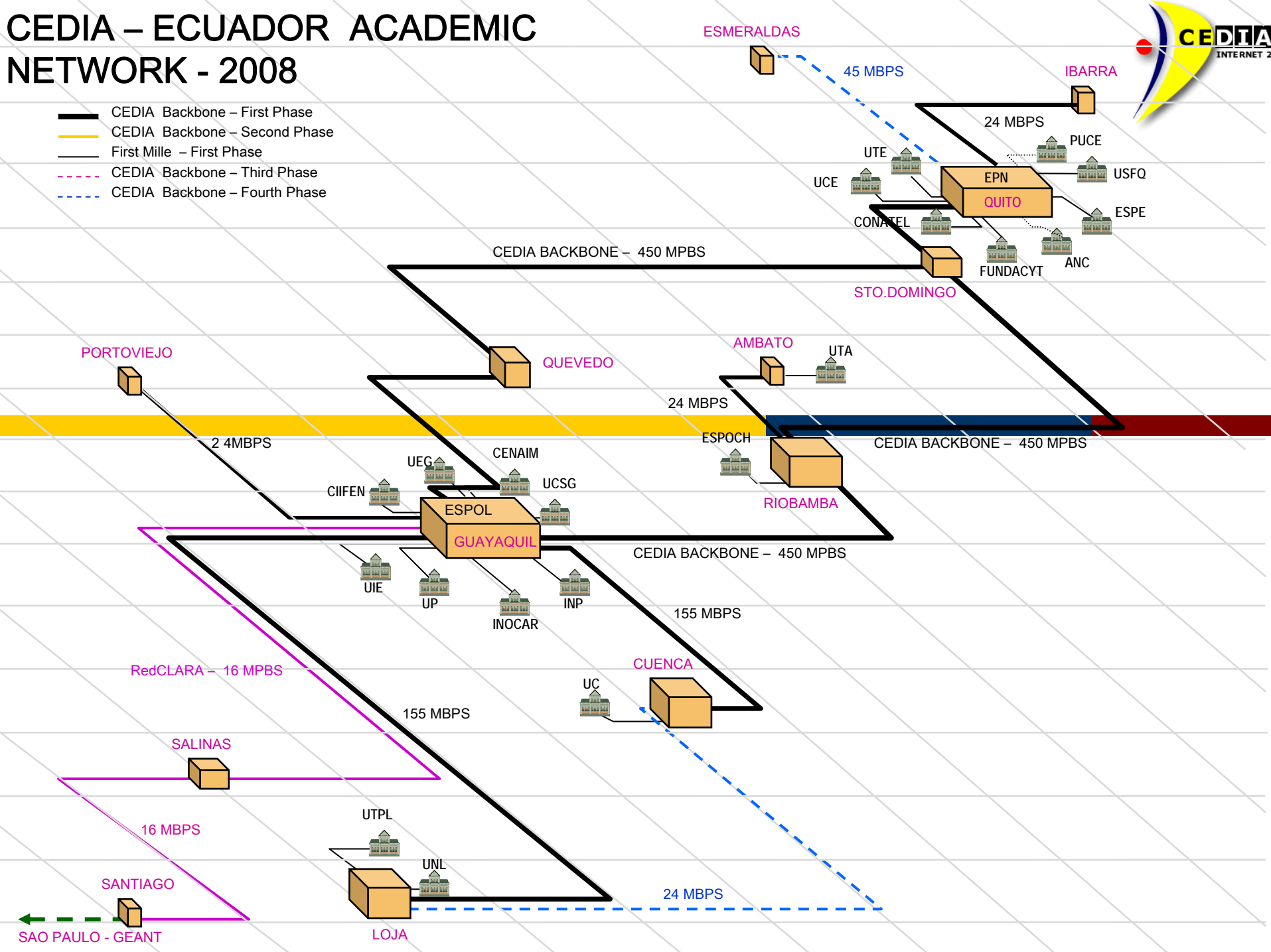
- CEDIA Backbone – First Phase
- CEDIA Backbone – Second Phase
- First Mille – First Phase
- - - CEDIA Backbone – Third Phase
- - - CEDIA Backbone – Fourth Phase



# CEDIA – ECUADOR ACADEMIC NETWORK - 2008



- CEDIA Backbone – First Phase
- CEDIA Backbone – Second Phase
- First Mille – First Phase
- - - CEDIA Backbone – Third Phase
- - - CEDIA Backbone – Fourth Phase

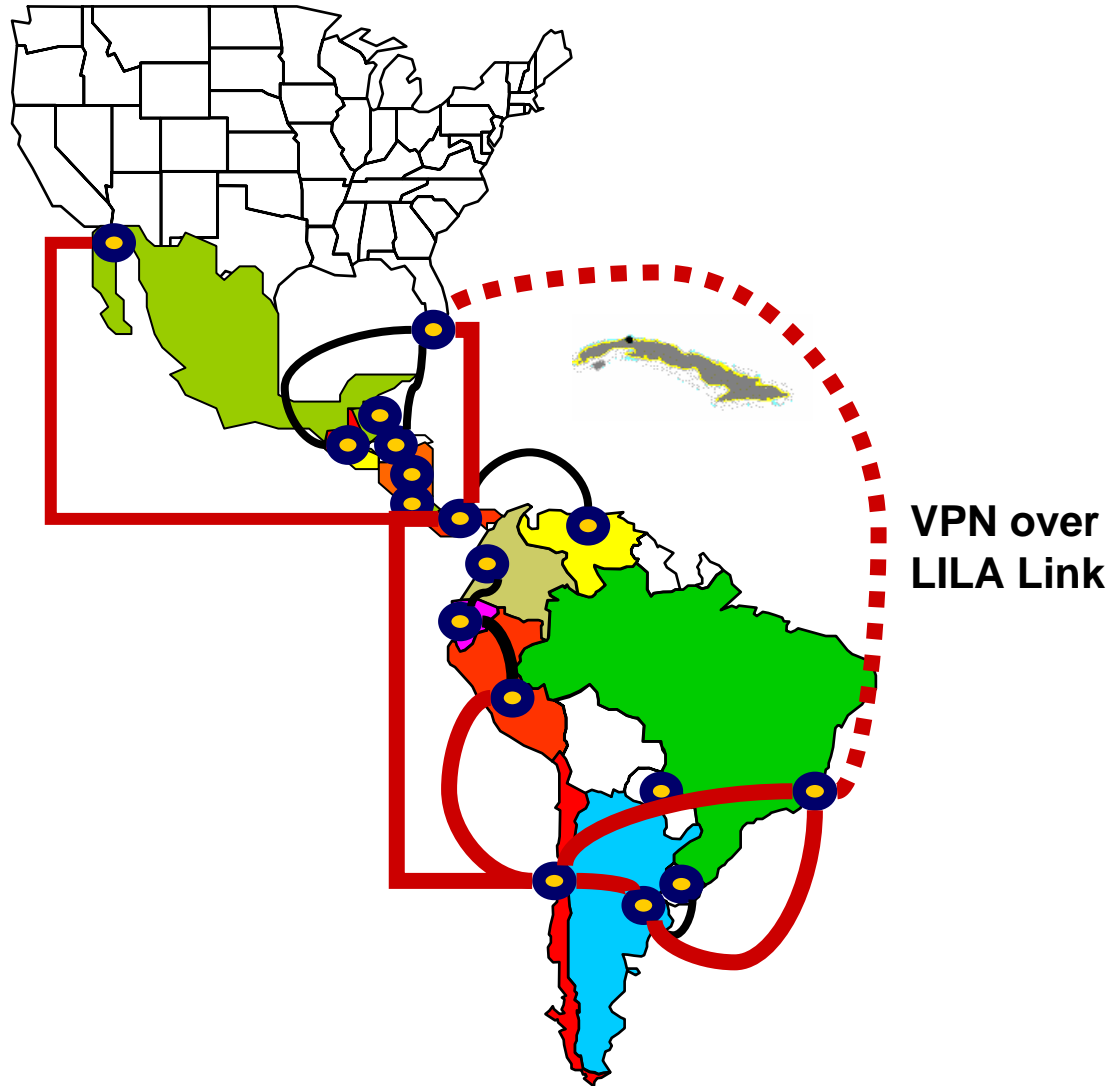


# ALICE Project and CLARA

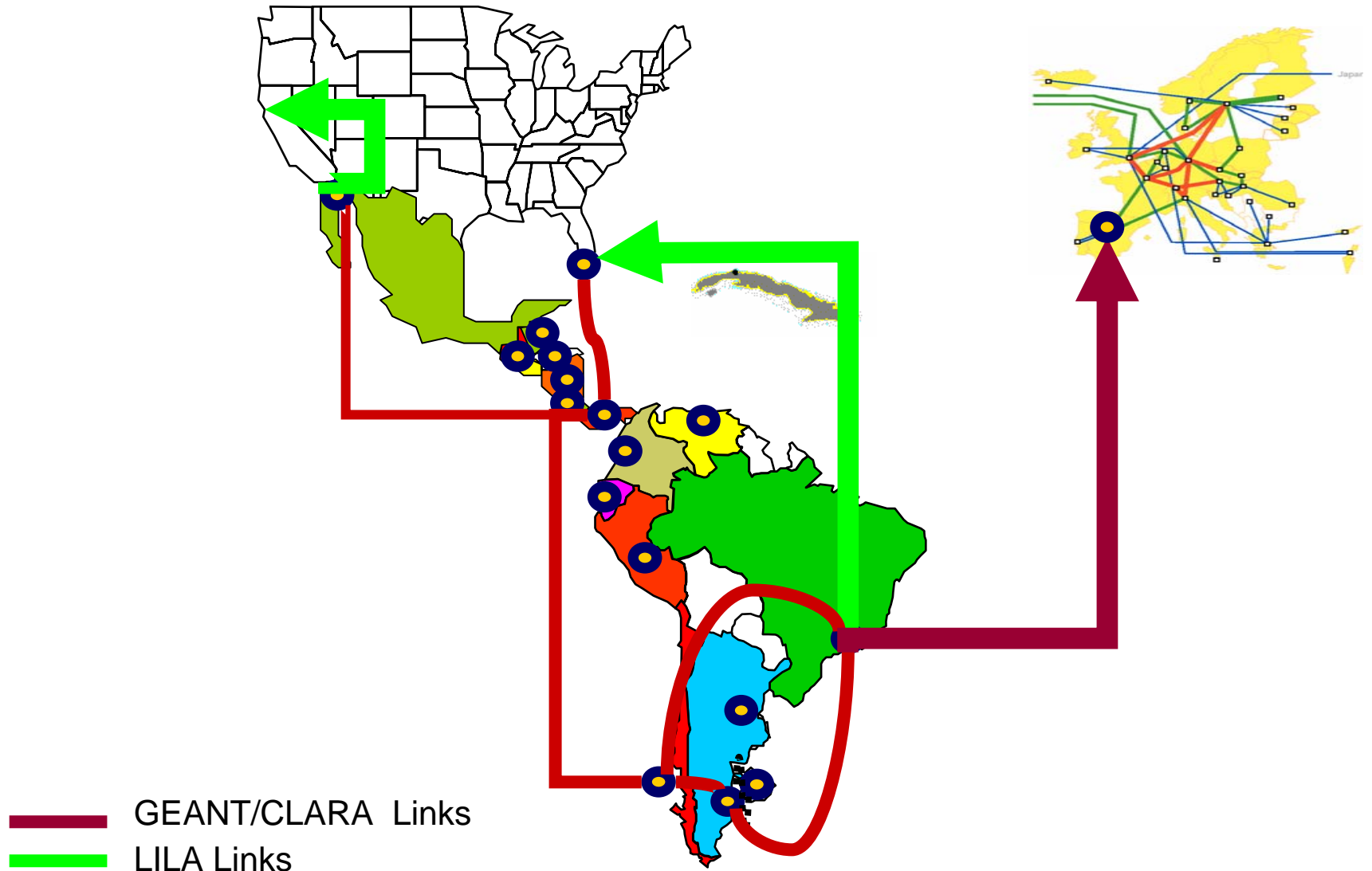
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- 18 Latin American Countries and 4 European NRENs
- CLARA is legally established in Uruguay
- RedCLARA - the Network
  - The Operations are carried out by CUDI in Mexico
  - The Engineering subcontracted to RNP in Brazil
  - The Information Systems subcontracted to REUNA in Chile

# Complete Topology - 2008



# Intercontinental - Connections



# Some results and status

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- The first national tender for bandwidth ended with a 69% reduction in prices for CEIDA's members
- From US\$ 117.000 monthly for aggregated 17 Mbps (asymmetric – 5 different providers) – US\$ 6.88 per Kbps, down to US\$ 3.17 per Kbps
- Today it is US\$ 0,19 per Kbps – 547 Mbps (full duplex, fo)
- Following tenders average 23% reduction in bandwidth prices and around 32% in equipment prices
- An average increase of 600% in capacity for every member, and standardize the minimum bandwidth.

# Some results and status

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- A flat rate to all Members, no matter where they are located in the country
- US\$ 0 costs for last-first mille
- US\$ 0 costs for the academic network
- Bandwidth usage in 45% after increase to 547Mbps



# Weaknesses and other reflections

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- Collecting payments schema
- First mille still a burden to take advantage of national fiber network from fondo de solidaridad
- Few active research groups (multi university groups) of scientists working together
- Scarce participation at high-end science and technology research

# Next steps

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- Promote exchange of content and applications.
  - Multi and Trans disciplinary project development with Ecuadorian Scientists and Technicians in the following areas:
    - Tele medicine
    - Tele education
    - Digital Libraries
    - El Niño event
    - Materials
- Promote participation at high-end science and technology research
- First version of CEDIA's network was developed with the help of international partners, such as NSRC, the next version and after the Inter Institutional Agreement signed with Fondo de Solidaridad, there will be an update of the technology in the 3 main nodes of CEDIA's network and upgrade to 1 Gb.

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THANK YOU !!!